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Blockchain's Potential for Securing the Integrity and Availability of Academic Credentials

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Blockchain technology, initially developed for the creation and distribution of cryptocurrency, has surpassed its initial aspirations and poses immense potential in numerous fields such as finance, healthcare, and real estate. Blockchain is a decentralized, immutable distributed ledger that stores valuable assets—such as currency or information—within secure "blocks" that are interconnected and shared across a shared peer-to-peer network. The information inside these blocks is hashed to ensure the integrity of the stored assets; those hashes then affect the previous block of the chain. Any attempted modification of a previous block would then affect the hash of that block and all blocks before it. Blockchain also provides every individual within the network a copy of the ledger for cross-referencing changes to hashes and protecting against fraudulent claims by individuals and organizations. Furthermore, the records within the ledger are available from any device for users within the network who are authorized by the block's owner. Therefore, there is also a strong case for blockchain implementations securely storing and maintaining academic credentials such as diplomas, transcripts, extracurricular activities, and information pertaining to any courses taken. This poster evaluates the potential blockchain technology has for revolutionizing the process involved with storing and accessing academic credentials.